

What is claimed is:

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1. A method of manufacturing a liquid crystal display device, comprising:
 forming a switching element on a substrate;
 forming a passivation layer over the substrate;
 depositing a metal layer on the passivation layer;
 forming a photoresist pattern on the metal layer, such that a portion of the
 metal layer is exposed;
 treating the exposed portion of the metal layer with a plasma using the
 photoresist pattern as a mask; and
 removing the treated portion of the metal layer to form a pixel electrode.

2. The method of claim 1, wherein the switching element is a thin film transistor.

3. The method of claim 1, wherein the step of treating the exposed portion of the metal layer includes,
 using a reactive gas to lower a binding force in the exposed portion.

4. The method of claim 3, wherein the reactive gas includes H₂ plasma gas.

5. The method of claim 1, wherein the step of treating the exposed portion of the metal layer includes,
 using a non-reactive gas to lower a binding force in the exposed portion.

6. The method of claim 5, wherein the non-reactive gas includes Ar or N₂ plasma gas.

7. The method of claim 1, wherein the step of etching the metal layer involves a dry-etching technique.

8. The method of claim 7, wherein the step of etching the metal layer includes, etching the metal layer with HBr plasma gas.

9. The method of claim 7, wherein the step of etching the metal layer includes, etching the metal layer with a composition of HBr plasma gas and Cl₂ plasma gas.

10. The method of claim 7, wherein the step of etching the metal layer includes, etching the metal layer with a composition of HBr plasma gas and CH₄ plasma gas.

11. The method of claim 1, wherein the metal layer includes one of indium tin oxide (ITO) and indium zinc oxide (IZO).

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12. A method of manufacturing a pixel electrode in a liquid crystal display device, comprising:

depositing a metal layer on a passivation layer which partially covers a transistor;

forming a photoresist pattern on the metal layer, leaving a portion of the metal layer uncovered;

exposing the uncovered portion of the metal layer to a first plasma to lower a binding force in the uncovered portion; and

removing the uncovered portion of the metal layer with a second plasma to form a pixel electrode.

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13. The method of claim 12, wherein the first plasma is a reactive gas.

14. The method of claim 13, wherein the reactive gas includes H₂ plasma gas.

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15. The method of claim 12, wherein the first plasma is a non-reactive gas.

16. The method of claim 15, wherein the non-reactive gas includes Ar or N₂ plasma gas.

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17. The method of claim 12, wherein the second plasma includes HBr plasma gas.

18. The method of claim 12, wherein the second plasma includes a composition of HBr plasma gas and Cl_2 plasma gas.
19. The method of claim 12, wherein the second plasma includes a composition of HBr plasma gas and CH_4 plasma gas.
20. The method of claim 12, wherein the metal layer includes one of indium tin oxide (ITO) and indium zinc oxide (IZO).
21. The method of claim 12, further comprising:
removing the photoresist pattern from the pixel electrode.

22. A method of patterning a metal layer, comprising:
depositing a metal layer over a substrate;
forming a mask on the metal layer, leaving a portion of the metal layer uncovered;
exposing the uncovered portion of the metal layer to a first plasma to lower a binding force in the uncovered portion; and
removing the uncovered portion of the metal layer with a second plasma to form a metal pattern.

23. The method of claim 22, wherein the first plasma includes H_2 plasma gas.

24. The method of claim 22, wherein the first plasma includes Ar or N₂ plasma gas.
25. The method of claim 22, wherein the second plasma includes HBr plasma gas.
26. The method of claim 22, wherein the second plasma includes a composition of HBr plasma gas and Cl₂ plasma gas.
27. The method of claim 22, wherein the second plasma includes a composition of HBr plasma gas and CH₄ plasma gas.
28. The method of claim 22, wherein the metal layer includes one of indium tin oxide (ITO) and indium zinc oxide (IZO).
29. The method of claim 22, wherein the metal pattern includes a pixel electrode of a display device.

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